

## The effect of exploitation on reproductive potential of holothuria scabra in Tanzanian coastal waters

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The reproductive biology of the aspidochirote holothurian *Holothuria scabra* from Kunduchi (intensively fished), Buyuni (least fished), Magemani (adjacent to MPA; intensively fished) and Kitoni (protected under marine parks management) along the coast of Tanzania was analyzed. The data were obtained from monthly sampling from 2003 to 2005 on reproductive potential for *H. scabra* (Kunduchi (n=109), Buyuni (n=149), Kitoni (n=250), and Magemani (n=180)). The reproductive cycle, comprising gonad growth, maturing, spawning, post-spawning and resting phases, were determined from the changes in the sexual stages, the gonad indices and the percentage of indeterminate sex. Size of the individuals at first sexual maturity varied among sites (*H. scabra* male = 110 g and female 140 g at Kunduchi; 95.6 g and 113 g at Buyuni; 153 g and 329 g at Kitoni). Mean fecundity (MF) varied among months and sites (*H. scabra* MF = 4.4 million eggs at Kunduchi, 3.7 million eggs at Buyuni, 5.3 million eggs at Kitoni, 5.5 million eggs at Magemani). The data on sex ratios in relation to months indicated that males outnumbered females in all months. There was no significant sex ratio deviation from 1:1 for *H. scabra* in all months at Magemani. The rest showed variation in some months. The varied gradient in reproductive potential of this species is probably related to the effects of exploitation pressure and varied disturbances of the biotopes.